## Cenerate Collection Print

L8: Entry 53 of 159 File: USPT May 14, 2002

S-PAT-NO: 6387619

OCUMENT-IDENTIFIER: US 6387619 B1

\* See image for Certificate of Correction \*\*

ITLE: Telomerase compositions and methods

ATE-ISSUED: May 14, 2002

**NVENTOR-INFORMATION:** 

AME CITY STATE ZIP CODE COUNTRY

ottschling; Daniel E. Chicago IL inger; Miriam S. Chicago IL

S-CL-CURRENT: 435/6; 435/366, 435/91.2, 536/23.1, 536/24.3

LAIMS:

What is claimed is:

- 1. A method of using a DNA segment that comprises an isolated gene associated with non-ciliate telomerase, wherein said DNA segment is characterized as encoding a polypeptide that includes a contiguous amino acid sequence of at least about 17 amino acids from SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22 or SEQ ID NO:24, or is characterized as specifically hybridizing to the nucleic acid segment of SEQ ID NO:29, SEQ ID NO:30, SEQ ID NO:19, SEQ ID NO:31 or SEQ ID NO:23, or the complement thereof, the method comprising the steps of:
- (a) preparing a recombinant vector in which a non-ciliate telomerase-associated gene is positioned under the control of a promoter;
- (b) introducing said recombinant vector into a recombinant host cell;
- (c) culturing the recombinant host cell under conditions effective to allow expression of the telomerase-associated gene; and
- (d) collecting the expressed gene product.
- 2. A method for modifying the telomerase activity of a cell, comprising contacting a

telomerase-containing cell with an amount of a composition effective to modify telomerase activity, said composition comprising:

- (a) an isolated RNA segment of from 25 to about 1,500 nucleotides in length that comprises a non-ciliate telomerase RNA template, the RNA segment specifically hybridizing to the nucleic acid segment of SEQ ID NO:1 or the complement thereof under high stringency hybridization conditions; or
- (b) an isolated telomerase-associated protein or polypeptide that includes a contiguous amino acid sequence of at least about twelve amino acids from SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22 or SEQ ID NO:24,

and assaying said cell for telomerase activity.

- 3. The method of claim 2, wherein said composition comprises:
- (a) a nucleic acid segment that includes the DNA sequence of SEQ ID NO: 1; or (b) a nucleic acid segment that includes the contiguous DNA sequence from position 54 to position 1799 of SEQ ID NO:29, the contiguous DNA sequence from position 78 to position 1094 of SEQ ID NO:30, the contiguous DNA sequence from position 2 to position 2368 of SEQ ID NO: 19, the contiguous DNA sequence from position 55 to position 699 of SEQ ID NO:31, or the contiguous DNA sequence from position 3 to position 1955 of SEQ ID NO:23.
- 4. The method of claim 2, wherein said telomerase-containing cell is a human cell.
- 5. The method of claim 2, wherein said telomerase-containing cell is a sperm cell.
- 6. The method of claim 2, wherein said telomerase-containing cell is an egg cell.
- 7. The method of claim 2, wherein said telomerase-containing cell is a tumor cell.
- 8. The method of claim 2, wherein said telomerase-containing cell is a pathogenic cell.
- 9. The method of claim 2, wherein said telomerase-containing cell is located within an animal and a pharmaceutically acceptable formulation of said composition is administered to said animal.

- 10. A method for modifying the viability a cell with increased age, comprising contacting a telomerase-containing cell with an amount of a composition effective to modify telomerase activity, said composition comprising:
- (a) an isolated RNA segment of from 25 to about 1,500 nucleotides in length that comprises a non-ciliate telomerase RNA template, the RNA segment specifically hybridizing to the nucleic acid segment of SEQ ID NO:1 or the complement thereof under high stringency hybridization conditions; or
- (b) an isolated telomerase-associated protein or polypeptide that includes a contiguous amino acid sequence of at least about twelve amino acids from SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22 or SEQ ID NO:24.